UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/623,568	07/22/2003	Daisuke Suzuki	Q76655	6560

23373 7590 10/19/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER	
MOON, SEOKYUN	
ART UNIT	**PAPER NUMBER**
2675	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/623,568	SUZUKI ET AL.	
	Examiner	Art Unit	
	Seokyun Moon	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-49* is/are rejected.

7)☒ Claim(s) *7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1, 5, 22, and 30** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The limitation *"in case that a plane being about parallel to the front surface of said cabinet is defined as an XY plane in an XY orthogonal coordinate system"* of Claims 1, 5, 22, and 30 contain an incomplete conditional statement. Furthermore, the phrase *"about parallel"* is considered indefinite since it is not indicated clearly to what degree it is intended.

For further examination purposes of this application, the limitation will be interpreted as any plane being parallel to the front surface of said cabinet, defined as an XY plane in a two dimensional orthogonal coordinate system while X and Y coordinates are orthogonal to each other.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. **Claims 1, 2, and 4** are rejected under 35 U.S.C. 102(a) as being anticipated by Nishino et al. (US Pub. No. 2002/0097224 A1, herein after referred to as "Nishino").

As to **Claim 1**, Nishino (Fig. 60) teaches an inputting device (pointing device 460), which is disposed in an opening part (center opening 430) of a cabinet (base section 402), comprising:

if a plane is parallel to the front surfaces (end plate 428a) of said cabinet, the plane is defined as an XY plane in an XY orthogonal coordinate system,

an elastic sheet (second connecting portion 448) that is made of a material having elasticity and flexibility or having only elasticity and is disposed inside said cabinet in about parallel to said XY plate in a state that the front surface of said elastic sheet faces the rear surfaces of the front side (cover member 428) of said cabinet;

a sliding key (a combination of actuating part 464, operating surface 452, and major portion 444 of elastic part 414) that is fixed tightly on the front surface of said elastic sheet so that said sliding key is disposed at an about center of said opening part in a state that said sliding key is possible to move in an arbitrary direction on said XY plane; and

sensors (magnet-electro transducer 408) that at least detect the moved direction of said sliding key on said XY plane (Paragraph [0290] :lines 1-8 and Paragraph [0291]: lines 1-12).

As to **Claim 2**, Nishino (Fig. 61) teaches an inputting device in accordance with claim 1, wherein:

said sliding key has a rim part (major portion 444) whose diameter is larger than that of said opening part.

As to **Claim 4**, Nishino teaches an inputting device in accordance with claim 1, further comprising:

a first control signal generating means (CPU) that generates a first control signal (digital coordinate data) corresponding to at least the moved direction of said sliding key detected by said sensors, wherein:

said first control signal executes the change of the position of a subject to be controlled on a display (Paragraph [0146]).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claim 3** is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishino.

Nishino (Fig. 60) teaches an inputting device (pointing device 460) in accordance with claim 2, wherein:

said sliding key (a combination of actuating part 464, operating surface 452, and major portion 444 of elastic part 414) is adhered to said elastic sheet (second connecting portion 448) at said rim part (major portion 444).

Nishino does not teach a space formed on a part of the rear surface and the edge part of said rim part being disposed in said space.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a space formed on the rear surface of the cabinet such that the edge part or the rim resides in space for the purpose of preventing friction caused by direct contact of the rear surface and the elastic part 444, thus providing a better environment for the movement of the sliding key.

7. **Claims 5, 6, 8-17, 21-24, and 26-49** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishino, in view of Yasuda (US Patent No. 5,012,230, herein after referred to as "Yasuda").

As to **Claim 5**, Nishino (Fig. 61) includes an inputting device (pointing device 460), which is disposed in an opening part (center opening 430) of a cabinet (base section 402), comprising:

if a plane is parallel to the front surface of said cabinet, the plane is defined as an XY plane in an XY orthogonal coordinate system,

an elastic sheet (second connecting portion of elastic part 448) that is made of a material having elasticity and flexibility or having only elasticity and is disposed inside said cabinet in about parallel to said XY plane in a state that the front surface of said elastic sheet faces the rear surface (cover member 428) of the front side of said cabinet;

a sliding key (a combination of actuating part 464, operating surface 452, and major portion 444 of elastic part 414) that is fixed tightly on the front surface of said elastic sheet so that said sliding key is disposed at an about center of said opening part

in a state that said sliding key is possible to move in an arbitrary direction on said XY plane;

sensors (magnet-electro transducer 408) that at least detect the moved direction of said sliding key on said XY plane (Paragraph [0146]).

Nishino does not teach a surrounding key being fixed on elastic sheet and switches detecting whether surrounding key is pushed or not.

However, Yasuda (Fig. 2) discloses a surrounding key (a combination of the movable member 22 and the supporting plate 23) being a ring shape that is fixed tightly on the front surface of said elastic sheet (electrode cover 26) and switches (printed electrodes 30) that detect whether said surrounding key is pushed in one direction in the XY directions or not (Column 4: Lines 47-68 and Column5).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to include Yasuda's surrounding key to the device of Nishino so as to provide a smooth input operation with a light operational force (Column 1: Lines 55-58).

As to **Claim 6**, Nishino (Fig. 61) as modified teaches an inputting device in accordance with claim 5, wherein;

said sliding key (a combination of actuating part 464, operating surface 452, and major portion 444 of elastic part 414) has a rim part (major portion 444) whose diameter is larger than that of said opening part (center opening 430).

As to **Claim 8**, most of the claim limitations have already been discussed with respect to the rejection of claims 4 and 6, with the exception of the second control signal

generating means and the second control signal executing the change of the position of a subject to be controlled on a display.

Nishino as modified (Yasuda: Fig. 2) discloses a second control signal generating means (electric means) that generates a second control signal (output signal) corresponding to the pushed direction of one of the edges of said surrounding key (a combination of the movable member 22 and the supporting plate 23) detected by one of said switches (printed electrodes 30); wherein:

said first control signal (click signal) and said second control signal (digital coordinate data) execute the change of the position of a subject to be controlled on a display (Yasuda: Column 2 Lines 16-20).

As to **Claim 9**, Nishino as modified (Fig. 60) teach an inputting device in accordance with claim 1 or 5, wherein:

a magnet (406) is disposed in said sliding key (a combination of actuating part 464, operating surface 452, and major portion 444), and

said sensors (magnet-electro transducer 408) detect the moved direction and the amount of the movement of said sliding key on said XY plane based on the change of the magnetic flux density from said magnet corresponding to the movement of said sliding key (Paragraph [0005]: Lines 1-6 and Paragraph [0290]: Lines 1-8).

As to **Claim 10**, Nishino (Fig. 61) as modified teaches an inputting device in accordance with claim 9, wherein:

said sliding key provides a concave part on a part of the surface where said sliding key is adhered to said elastic sheet, and

said sliding key is adhered to said elastic sheet by disposing said magnet in said concave part, and

said magnet is sealed in said sliding key (Paragraph [0291]: Lines 1-3).

As to **Claims 11 and 12**, most of claim limitations have already been discussed with respect to the rejection of claims 1 and 5 except for the detecting units (claim 11: the guide with the sensor for optical detection and claim 12: the coil with the sensor for electromagnetic induction detection) for detecting the movement of the sliding key.

However, it would have been obvious to use the detecting units indicated on claims 11 and 12 to replace the magnet (406) and the sensor (magnet-electro transducer 408) of Nishino as modified since the examiner takes Official Notice of the equivalence of the detecting units indicated on claims 11 and 12 for their uses in detection of the movement of objects and the selection of any of these known technologies or devices to detect the moment of the sliding key would be within the level of ordinary skill in the art.

As to **Claim 13**, Nishino (Fig. 61) as modified teaches an inputting device in accordance with claim 1 or 5, further comprising:

a contact switch (switch mechanism 410) that detects that said sliding key was pushed in the inside direction of said cabinet by disposing at the position facing a pushing component (bump 468) (Paragraph [0048] Lines 6-9); and

a third control signal generating means (CPU) that generates a third control signal (click signal) when said pushing component made said contact switch work; wherein:

said third control signal (CPU) executes the selection or the decision of information indicating by a subject to be controlled on a display (Paragraph [0162]: Lines 1-9).

Nishino and Yasuda does not teach expressly the pushing component to be made of a material that is harder than the elastic sheet and whose friction factor is smaller than the elastic sheet.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the characteristics of the material used for the pushing component described on claim 13 in Nishino as modified because the pushing component is required to be made of the material that is harder than the elastic sheet so that when the user pushes the key with enough force to change the shape of the elastic sheet and thus makes the pushing component to touch the metal dome, the component pushes the metal dome without absorbing the user's force by deforming itself. Also it is required or expected to have such characteristics in the material used for the pushing component because when the user applies enough force to deform or push the elastic sheet, the user shouldn't need any additional force to shift the pushing component.

As to **Claim 14**, Nishino as modified teaches an inputting device in accordance with claim 13.

Nishino does not teach an ignoring means that ignores said third control signal, in case that the amount of the movement of said sliding key on said XY plane is larger than a designated value.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the ignoring means as indicated on claim 14 in Nishino as modified to prevent the user from operating two functions (sliding and pushing) of the inputting device simultaneously, thus restricting the unexpected movement of a subject to be controlled on a display caused by two different functions of the inputting device.

As to **Claim 15**, Nishino (Fig. 61) as modified teaches an inputting device in accordance with claim 13, further comprising:

a printed circuit board (circuit board 418) on which said contact switch (switch mechanism 410) is disposed; and

a sheet (support member 420) that covers said printed circuit board disposed said contact switch (Paragraph [0272]: Lines 1-4).

As to **Claim 16**, Nishino (Fig. 62A) as modified teach an inputting device in accordance with claim 1 or 5, further comprising:

a bellows (major portion 444 of elastic part 414) having a ring shape formed in said elastic sheet (elastic part 414) outside the position where said sliding key is adhered to said elastic sheet.

As to **Claim 17**, Nishino as modified teach an inputting device in accordance with claim 1 or 5, further comprising:

at least of projections (annular recess 442) supporting said sliding key on the rear surface of said elastic sheet;

As to **Claim 21**, Nishino as modified teaches an inputting device in accordance with claim 1 or 5, wherein:

a group of keys (Yasuda: a combination of the movable member 22 and the supporting plate 23) except said sliding key is also formed on the front surface of said elastic sheet (electrode cover 26) in a unified state.

As to **Claim 22**, most of the claim limitations have already been discussed with respect to the rejection of claims 1 and 5, with the exception of a mobile terminal and a display means that displays information.

Nishino (Fig. 45A) as modified discloses that the pointing device of Nishino as modified can be a part of mobile terminal (portable information apparatus) (Nishino: Paragraph [0249]).

Nishino as modified does not disclose a display means that displays information.

However, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a display means in Nishino as modified to show or observe the movement of the sliding key since Nishino teaches the use of his pointing device in a portable information apparatus which has a display means inherently.

As to **Claim 23**, all of the claim limitations have already been discussed with respect to the rejection of claims 13 and 22.

As to **Claim 24**, most of the claim limitations have already been discussed with respect to the rejection of claims 9 and 22, with the exception of:

said first controlling means executes said first control corresponding to the moved direction and the amount of the movement of said sliding key.

Nishino as modified teaches a controlling means (CPU) executes control corresponding to the moved direction and the amount of the movement of the sliding key (Paragraph [0146]).

As to **Claim 25**, all of the claim limitations have already been discussed with respect to the rejection of claims 14 and 23.

As to **Claim 26**, all of the claim limitations have already been discussed with respect to the rejection of claims 15 and 23.

As to **Claim 27**, Nishino and Yasuda teaches a mobile terminal (pointing device 10) in accordance with claim 22, wherein:

said first controlling means (CPU) executes the change of the position displaying a subject to be controlled on said displaying means.

As to **Claim 28**, all of the claim limitations have already been discussed with respect to the rejection of claims 23 and 28.

As to **Claim 29**, all of the claim limitations have already been discussed with respect to the rejection of claims 2, 3, and 22.

As to **Claim 30**, all of the claim limitations have already been discussed with respect to the rejection of claims 8 and 22.

As to **Claim 31**, all of the claim limitations have already been discussed with respect to the rejection of claims 23 and 30.

As to **Claim 32**, all of the claim limitations have already been discussed with respect to the rejection of claims 24 and 30.

As to **Claim 33**, all of the claim limitations have already been discussed with respect to the rejection of claims 25 and 31.

As to **Claim 34**, all of the claim limitations have already been discussed with respect to the rejection of claims 26 and 31.

As to **Claim 35**, all of the claim limitations have already been discussed with respect to the rejection of claims 8 and 35.

As to **Claim 36**, all of the claim limitations have already been discussed with respect to the rejection of claims 28 and 31.

As to **Claim 37**, Nishino and Yasuda discloses a mobile terminal in accordance with claim 30, wherein:

said first controlling means (Nishino: CPU) executes the change of the position displaying a first subject to be controlled on said displaying means (Paragraph [0146]), and

said second controlling means (electric means) executes the change of the position displaying a second subject to be controlled on said displaying means (Column 12: Lines 16-20).

As to **Claim 38**, all of the claim limitations have already been discussed with respect to the rejection of claims 36 and 37.

As to **Claim 39**, all of the claim limitations have already been discussed with respect to the rejection of claims 29 and 30.

As to **Claim 40**, all of the claim limitations have already been discussed with respect to the rejection of claims 9, 22, and 30.

As to **Claim 41**, all of the claim limitations have already been discussed with respect to the rejection of claim s 10 and 40.

As to **Claim 42**, all of the claim limitations have already been discussed with respect to the rejection of claims 11, 20, and 30.

As to **Claim 43**, all of the claim limitations have already been discussed with respect to the rejection of claim s 12, 22, and 30.

As to **Claim 44**, all of the claim limitations have already been discussed with respect to the rejection of claims 16, 22, and 30.

As to **Claim 45**, all of the claim limitations have already been discussed with respect to the rejection of claims 17, 22, and 30.

As to **Claim 46**, all of the claim limitations have already been discussed with respect to the rejection of claims 18, 22, and 30.

As to **Claim 47**, all of the claim limitations have already been discussed with respect to the rejection of claims 19, 22, and 30.

As to **Claim 48**, all of the claim limitations have already been discussed with respect to the rejection of claims 20, 22, and 30.

As to **Claim 49**, all of the claim limitations have already been discussed with respect to the rejection of claims 21, 22, and 30.

9. **Claims 18, 19, and 20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishino in view of Yasuda as applied to claim 5 above, and further in view of Hill et al. (US Pub No. 2003/0206154 A1, herein after referred to as "Hill").

As to claim 18, Nishino as modified teaches an inputting device in accordance with claim 1 or 5.

Nishino as modified do not teach a concave part formed on the front surface.

However, Hill (Fig. 8) discloses a pointing device (actuator 60) which has a concave part (central concave aperture 64) formed on the front surfaces of the device (Paragraph [0028]: Lines 1-5).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the concave part on the front surface of Hill's pointing device in Nishino as modified so that the sliding key of Nishino forms well to the user's finger, thus providing a better control (Paragraph [0011]: Lines 5-9).

As to claims 19 and 20, Nishino as modified (Hill: Fig. 6) teaches an inputting device in accordance with claim 1 or 5, further comprising:

a nonskid component (resilient material) disposed on the front surface of said sliding key (actuator 34).

one or more projections (conical flare 58) formed on the front surface of said sliding key (Hill: Paragraph [0027] Lines 9-11).

Allowable Subject Matter

10. **Claim 7** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: None of the references teaches an inputting device in accordance with claim 6, wherein:

a space is formed on a part of the rear surface of said surrounding key, and about the edge part of said rim part of said sliding key is disposed in said space.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sumati Lefkowitz can be reached on (571) 272-3638. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KENT CHANG
PRIMARY EXAMINER

09/29/2005